



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q53818

Takayuki KIFUKU

Appln. No.: 09/286,418

Group Art Unit: 3661

Confirmation No.: 4951

Examiner: Brian J. Broadhead

Filed: April 06, 1999

For: ELECTRIC POWER STEERING SYSTEM

STATEMENT UNDER 37 C.F.R. § 1.704(d)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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JUL 16 2003

GROUP 3600

Sir:

The undersigned hereby states, upon information and belief:

That each item of information contained in the Information Disclosure Statement filed concurrently herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making a reasonable inquiry, that the communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of said Information Disclosure Statement.

Respectfully submitted,

Cameron W. Beddard
Registration No. 46,545

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE



23373

PATENT TRADEMARK OFFICE

Date: July 11, 2003



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GROUP 3600

Sir:

The undersigned hereby states, upon information and belief:

That each item of information contained in the Information Disclosure Statement filed concurrently herewith was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of said Information Disclosure Statement.

Respectfully submitted,

Cameron W. Beddard
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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 and 1.98**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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JUL 16 2003

GROUP 3600

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

One copy of each of the listed documents is submitted herewith.

The present Information Disclosure Statement is being filed after either a Final Office Action, Notice of Allowance, or an action that otherwise closes prosecution in the application (whichever is earlier), but before payment of the Issue Fee, and therefore Applicant is submitting herewith a check for the fee of \$180.00 under 37 C.F.R. § 1.17(p), and a Statement Under 37 C.F.R. § 1.97(e). The USPTO is directed and authorized to charge all required fees, except

INFORMATION DISCLOSURE STATEMENT

U.S. Appln. No.:09/286,418

for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

The present Information Disclosure Statement is being filed thirty days or fewer from the communication from a foreign patent office and a Statement Under 37 C.F.R. §1.704(d) is attached.

In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant encloses herewith a copy of a Communication from a foreign patent office in a counterpart application citing such documents, together with an English-language version (if not already included) of that portion of the Communication indicating the degree of relevance found by the foreign patent office. Also enclosed are English-language versions of the brief descriptions of the foreign language documents.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

Respectfully submitted,



Cameron W. Beddard
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INFORMATION DISCLOSURE STATEMENT

Given below are prior arts with their brief descriptions.

Japanese Literature

(1) Japanese Laid-Open Patent No.H08-175404

An electric power steering system, adapted to assist the static steering torque based on output from a torque sensor, comprising a circuit for detecting applied voltage to the motor capable of removing rectangular wave component appearing through PWM drive of the motor, wherein carrying out estimation of motor angular velocity ω from output of the circuit, carrying out estimation of motor angular acceleration $d\omega/dt$ of the motor from the motor angular velocity ω through differentiation means having band pass filtering characteristics and carry out compensation of friction and moment of inertia based on the motor angular velocity ω and the motor angular acceleration $d\omega/dt$, respectively.

(2) Japanese Laid-Open Patent No.H04-356274

An arrangement is made for attaining the first object, measurement of friction of the motor steering unit with high accuracy, the value corresponding to the unit friction is obtained, while supplying a gradually increasing current to the motor during the friction measurement, through subtracting the first motor current value appearing at the time when the motor rotational angle is detected from the

second motor current value appearing at the time when the real steering angle is detected; and for the second object, measurement of load of the unit with high accuracy, the value corresponding to the unit load is obtained, while supplying a gradually increasing current to the motor during the load measurement, through subtracting the second motor current value appearing at the time when the real steering angle is detected from the third motor current value appearing at the time when the real steering set angle is detected.

Notice of Rejection

Application No. H10-278181
Date of Preparation: June 19, 2003
Examiner of the Patent Office:
Representative of the Applicant:
Applied Patent Law: Article 29, Subsection 2; Article 36

The Patent Application referenced above is rejected reasoning of which is stated hereunder. If the applicant has any opinion against reasoning of this rejection, a written opinion shall be submitted within 60 days from the date of dispatch of this Notice of Rejection.

Ground of Rejection on Prior Arts (Articles 29, Subsection 2 and Article 36 of Patent Law). < 1 > The invention as set forth by the claims specified hereunder may not be obtained because a person having an ordinary skill in the art was able to make the invention before filing the patent application based on the invention described in the undergiven documents which have been placed to be available to be accessed to public since a time before filing of the patent application in Japan or in a foreign county under Article 29, Subsection 2 and Article 36 of the Patent Law.

Detailed Action

- Claims under Rejection: 1, 4, 5, 9 and 18
- Cited Documents:

The first cited Document: Japanese Laid-Open Patent No. H08-175404,

The second cited Document: Japanese Laid-Open Patent No. H04-356274.

The first cited Document:

An electric power steering system for assisting steering force of the steering system, that is carried out by driving a motor coupled to the steering system based on a value of steering force obtained through detecting the force exerted by a driver,

- prime characteristic feature exists in carrying out compensation of dynamic friction or moment of inertia of the steering system based

on angular velocity or angular acceleration of motor or steering angle, respectively.

The second cited Document:

An electric power steering system comprising a means for obtaining an estimated value of a static friction of the steering system by estimating the static friction of the same and a means for compensating the static friction based on the estimated value of the static friction (see descriptions in paragraphs 0039, 0040, 0044~0056 and 0058),

- prime characteristic feature exists in carrying out estimation of the static friction of the steering system through extraction of edge of the motor current and also.
- exists in carrying out compensation of the static friction of the steering system based on the static friction compensation which has been obtained through computation of the static friction compensation including a term proportional to the static friction estimation value obtained through performing a positive feedback of the static friction estimation value (refer to description on Kp).

Ground of Rejection on Formalities/Indefiniteness (Article 36, Subsection 5-2 and 6). <2> The patent application does not fulfill the requirement subscribed under provision of Article 36, Subsection 5-2 and 6 with regard to delimiting of the scope of the subject matter of the claimed invention as undergiven.

Namely, description of the specification and drawings are deficient with regards to the following points:

- (1) What the wording "the edge of the steering force detection value" in claim 2 is intended to refer to is unclear.
- (2) What the wording "the edge of a motor current" in claim 4 is intended to refer to is unclear.

Accordingly, claims 2 and 4 are not written in such a manner that the subject matter sought to be patented consists of essentially required elements only.

Presently, no reasoning of rejections have been found from the claims other than those which are already subjected to rejection as hitherto indicated. However, whenever reasoning for rejection is newly found, Notice of Rejection will be dispatched.

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Record on Result of Search on Prior Art Document

- Field of Search. IPC Seventh Publication, B62 D5/04, B62D6/00
- Prior Art Document. Japanese Laid-Open Patent No.H06-144280.

The document entered in this "Record on Result of Search on Prior Art Document" does not constitute reasoning of rejection.